

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-14 (canceled).

15. (new) A light-leakage type photocatalyst filter, comprising:

a photocatalyst fiber bundle which is formed by longitudinally bundling a plurality of photocatalyst fibers, each composed of a core portion of a photoconductor and a surface layer containing a photocatalyst, and having gaps which are left among the photocatalyst fibers and which provide passages for an object fluid;

a casing which includes an intermediate cylindrical portion for accommodating the photocatalyst fiber bundle;

an inflow port and an outflow port for the object fluid, each of which is formed in the vicinity of a respective side end of the casing; and

a light source for introducing light beams onto at least one end face of the photocatalyst fiber bundle;

the casing further comprising:

a light introducing window which is composed of a material transparent to the light beams and which guides the light beams onto the at least one end face of the photocatalyst fiber bundle; and

a reservoir which is located on at least one end side of the casing adjacent to the at least one end face of the photocatalyst fiber bundle and which is coupled to the light introducing window to make pressure distribution of the object fluid uniform on the at least one end face of the photocatalyst fiber bundle.

16. (new): A light-leakage type photocatalyst filter as claimed in claim 15, comprising granular spacers interposed among adjacent ones of the photocatalyst fibers to provide the gaps.

- 17 (new). A light-leakage type photocatalyst filter, comprising:
- a photocatalyst fiber bundle which is formed by longitudinally bundling a plurality of photocatalyst fibers, each composed of a core portion of a photoconductor and a surface layer containing a photocatalyst, and having gaps which are left among the photocatalyst fibers and which provide passages for an object fluid;
 - a casing which includes an intermediate cylindrical portion for accommodating the photocatalyst fiber bundle;
 - an inflow port and an outflow port for the object fluid, each of which is formed in the vicinity of respective side ends of the casing; and
 - at least first and second light sources, each source for introducing light beams onto respective end faces of the photocatalyst fibers;
- the casing further comprising:
- a plurality of light introducing windows, each composed of a material transparent to the light beams and operative to guide the light beams onto respective end faces of the photocatalyst fiber bundle; and
 - at least first and second reservoirs which are located on respective sides of the casing adjacent to respective end faces of the photocatalyst fiber bundle and which are coupled to the light introducing windows, respectively, to make pressure distribution of the object fluid uniform on both end faces of the photocatalyst fiber bundle.

18. (new): A light-leakage type photocatalyst filter as claimed in claim 17, comprising granular spacers interposed among adjacent ones of the photocatalyst fibers to provide the gaps.

19. (new) A light-leakage type photocatalyst filter, comprising:
- a photocatalyst fiber bundle which is formed by longitudinally bundling a plurality of photocatalyst fibers, each composed of a core portion of a photoconductor and a surface layer containing a photocatalyst, and having gaps which are left among the photocatalyst fibers and which provide passages for an object fluid;
 - a casing which includes an intermediate cylindrical portion for accommodating the photocatalyst fiber bundle and for surrounding one end of the photocatalyst fiber bundle; and

a light source for introducing light beams onto a first end face of the photocatalyst fiber bundle;

the light-leakage type photocatalyst filter further comprising:

at least one partition wall extended along a longitudinal direction of the photocatalyst fibers so as to divide the photocatalyst fibers; and

an inflow port and an outflow port for the object fluid, each port being located on a second end face side of the photocatalyst fiber bundle and being separated from the other port by the partition wall;

the casing further comprising:

a light introducing window of a transparent material which is located on the one end side of the casing adjacent to the one end face of the photocatalyst fiber bundle and which guides the light beams onto the one end face of the photocatalyst fiber bundle; and

a reservoir which is located on the one end side of the casing adjacent to the one end face of the photocatalyst fiber bundle and which is coupled to the light introducing window to make pressure distribution of the object fluid uniform on the one end face of the photocatalyst fiber bundle.

20 (new): . A light-leakage type photocatalyst filter as claimed in claim 19, comprising granular spacers interposed among adjacent ones of the photocatalyst fibers to provide the gaps.